

Training Manual Footwear and Tire Track

1.0 Objective

Provide training for a prospective footwear/tire track examiner.

2.0 Procedure

A novice examiner will complete the entire training program, while one with prior experience may complete only those portions deemed applicable, depending on their background. Very early in their training, the novice examiner should attend a recognized training class such as those offered by the FBI or CCI. The attendance will expedite their in-house training.

If the ultimate goal is qualification as an examiner in both footprints and tire tracks, the trainee should concentrate initially on footwear training. After qualifying as a shoe print examiner, the scientist can then repeat the training sequence focusing on tire tracks. As in shoe prints, the trainee should attend a recognized training class early in their course of study.

The trainee should maintain a notebook of important facts and techniques for use during training and as a useful reference in the future. By the completion of the training, the trainee is expected to have identified a minimum of three additional references to add to the training bibliography.

As the trainee progresses, the student and trainer will indicate the completion of various topics by signing and dating the manual as indicated. When training is completed, the new analyst will receive a copy of the signed manual, with the original going to the QA/QC manager. If training is done in two stages, footwear and then tire tracks, two separate copies of the manual will be signed.

3.0 History, Introduction

- 3.1. Become familiar with the history of footwear and tire track evidence.
- 3.2 Learn the value of footwear and tire track evidence
- 3.3 Gain a general knowledge of the types of tracks/marks, and methods available for recovery and comparison.
- 3.4 By the time the student completes readings for this section, he/she should have begun a notebook containing important facts, terms, and notes for future reference. This notebook ~~may be periodically inspected by the Criminalist responsible for your training.~~

Completion date, section 3: _____

Oct.99

Trainee: _____

Trainer: _____

Mentor

Bibliography:

Bodziak, William J. 1984. Shoe and tire impression evidence. Identification News 34(12) pp. 3-5, 8-14.

Bodziak, William J. 1999. Footwear impression evidence, ed 2: New York: Elsevier; chapters 1 and 14.

Fawcett, A.S. 1970. The role of the footmark examiner. Journal of the Forensic Science Society 10(4): 227-244.

Grogan, R.J., and Watson, T.R. 1971. Tyres and crime. Journal of the Forensic Science Society 11(1):3-13.

Hamilton, Douglas. 1949. Traces of footwear, tyres, and tools, etc. in criminal investigation. The Police Journal(British) 22: 42-29 and 128-137.

Hamm, Ernest D. 1989. Track identification: An historical overview. Journal of Forensic Identification 39:6.

McDonald, Peter. 1989. Tire Imprint Evidence. New York: Elsevier; Chapters 1,2,3 and 20.

4.0 Crime Scenes and Crime Scene Processing

4.1 Principles and procedures used in investigating a crime scene

4.2 Legal aspects

4.3 Chain of custody; evidence handling

4.4 Dynamics of the crime scene

4.4.1 Scene safety

4.5 Objectives of crime scene investigation

4.6 Principles of crime scene photography

4.7 Principles of evidence packaging

4.8 This section may be waived if the student has had practical experience with crime scene investigation, or has completed a recognized course in crime scene processing.

Completion date, section 4: _____

Trainee: _____

Trainer: _____

Mentor

Bibliography

Bodziak, 1999; *op. cit.*, chapters 1 and 2.

Idaho State Police Forensic Services Footprint/Tire Track Protocol, p.8-9.

Fisher, Barry. 1993. Techniques of crime scene investigation. Boca Raton: CRC Press, pp. 1-87.

Rynearson, Joseph M. 1997. Evidence and crime scene reconstruction, 5th ed.; Redding, Ca.: National Crime Investigation and Training.

Saferstein, Richard. 1982. Forensic science handbook, Vol 1. Englewood Cliffs: Prentice-Hall. pp. 16-20.

5.0 Manufacturing of footwear and tires

5.1.0 Shoe sole manufacturing

5.1.1 Molding processes

5.1.2 Wellman process

5.1.3 Other methods

5.1.4 Recognition of the manufacturing methods

5.2 Tire treads

5.2.1 Tire tread patterns

5.2.2 Tire manufacturing

~~5.3 Proficiency testing~~

Completion date, section 5: _____

Trainee: _____

Trainer: _____

Bibliography:

Oct.99

Bodziak, William J. 1999. *op. cit.* Chapters 6, 7, and 10; also p. 315.

Davis, and DeHaan. 1977. A survey of men's footwear. *Journal of Forensic Science Society*; V. 17; p. 271-285.

Hamm, Ernest D. 1989. The individuality of class characteristics in converse all- star footwear. *Journal of Forensic Identification*, 39(5): 277-292.

McDonald, Peter. 1989. *op. cit.* Chapters 1,2,3.

Rossi, William. 1985. The seven basic shoe styles. *Journal of the American Podiatric Medical Association*, 75(3): p.169-171.

Schacter, R.J. 1983. The art and science of footwear manufacturing. *Footwear Industries of America, Inc.*; Philadelphia.

Tread design guide. Product book, Tire Guides Inc, New York. An annual publication.

Web site: <http://members.aol.com/varfee/mastssite/content.html>

Web site, tires: http://gallery.uunet.be/Gerrit.Volekeryck/cars_database.htm

6.0 Two Dimensional Footwear Impressions

6.1 Definition

6.2 Surfaces on which they may be found.

6.3 Visible versus latent prints.

6.4 Methods of documentation and recovery

6.4.1 Lifting methods

6.4.1.1 Safety concerns

6.4.2 Photography

6.4.2.1 Cameras

6.4.2.2 Film

6.4.2.3 Lighting

6.5 Practical exercises

6.6 Enhancement techniques

6.6.1 Safety concerns

6.6.2 Photographic

6.6.3 Physical

- 6.6.4 Chemical
- 6.6.4.1 Material data safety sheets
- 6.7 Practical exercises

~~6.8 Proficiency testing.~~

Completion date, section 6: _____

Trainee: _____

Trainer: _____

Bibliography:

4 Bodziak, 1999; *op. cit.*, chapters 2, 4, 5.

Cassidy, Michael J., 1980. Footwear identification. Quebec, Canadian Government Printing Center, pp. 41-65.

Mankevich, Alexander. 1990. Determination of shoe size in out-of-scale photographs. Journal of Forensic Identification 40:1, pp. 1-13.

Walsh, K.A.J. and Buckleton, J.S., 1987. An aid for the detection and correction of inaccuracies in photographic reproduction of shoeprints, AFTE Journal, 19:3 pp.271-275.

Hamm, Ernest D., 1988. The value of shadow in foot wear and tire track evidence recovered by photographic techniques. Journal of Forensic Identification, 38:3, pp. 91-97.

Idaho State Police Forensic Services Footprint/ Tire Track protocol.

McDonald, Peter, 1989. Tire imprint evidence. Elsevier: New York; p. 37-65.

7.0 Three-Dimensional Impressions

- 7.1 Why cast?
- 7.2 Casting materials
 - 7.2.1 Safety concerns
 - 7.2.2 Temperate weather
 - 7.2.3 Snow casting
- 7.3 Preparing the cast
 - 7.3.1 Packaging and transport
 - 7.3.2 Cleaning

- 7.4 Practical exercises
- 7.5 Enhancement of three-dimensional impressions
- ~~7.6 Proficiency testing~~

Completion date, section 7: _____

Trainee: _____

Trainer: _____

Bibliography:

Bodziak, William J. 1999. Footwear impression evidence, 2d ed. New York: CRC Press; Chapters 3 and 5.

Brennan, J.S. 1982. Dental stones for casting depressed shoemarks and tyre marks. MPFSL report 24, November 1982.

Geller, Joel. 1990. Casting on road surfaces. Journal of Forensic Identification, 40(5):p. 279-282.

Hueske, Edward E. 1991 Photographing and casting footwear/tiretrack impressions in snow. Journal of Forensic Identification, 41(2); p. 92-95.

Nause, Lawren A. 1992. Casting footwear impressions in snow: snowprint-wax vs. prill sulphur. R.C.M.P. Gazette; 54(12); p. 1-7.

Vandiver, James V. 1980. Easier casting and better casts. Identification news; 30(5); p. 3-10.

8.0 Comparative Examinations

8.1 Standards and test impressions

8.1.1 Trace evidence

8.1.2 Blood

8.1.2.1 Safety concerns

8.1.3 Two dimensional test impressions

8.1.3.1 Photographic standards

8.1.4 Three-dimensional test impressions

8.1.5 Overlays

~~8.2 Proficiency testing~~

8.3 Class and identifying characteristics

8.3.1 Wear characteristics

8.3.2 What constitutes a positive identification?

8.4 Comparative examinations

8.4.1 Side-by-side

8.4.2 Measurements

8.4.3 Superimposition

8.5 Training bibliography updated

~~8.6 Proficiency testing~~

Completion date, section 8: _____

*Trainee: _____

Trainer: _____

Bibliography:

Abbott, John R. 1964. Footwear evidence, Springfield: Charles C. Thomas; chapters 4 and 5.

Bodziak, William J. 1999. *op. cit.* Chapters 8-11.

Idaho State Police Footwear and Tire Track protocols.

Jay, Daniel R. 1983 A method for preparing high resolution test impressions for footwear comparison. Identification News; 23(10): p. 5.

McDonald, Peter 1989. *op. cit.* Chapters 10, 11, 14, 15.

McQuire, Dennis L., and Kennington, Robert H. 1977. Comparative micrography techniques. AFTE Journal 9(1): 7-14.

Hamm, Ernest D. 1988. The value of shadow in footwear and tire track evidence recovered by photographic techniques. Journal of Forensic Identification; 38(3): p. 91-97.

Hueske, Edward E. 1991. A superior method for obtaining test prints from footwear and tires. Journal of Forensic Identification; 41(3): p. 165-167.

Nause, Lawren A. 1987. The science of tire impression identification. R.C.M.P. Gazette; 49(1): p. 1-2.

9.0 Report writing and testimony

Oct.99

9.1 Wording of the final report

9.1.1 Administrative and peer reviews

9.2 Testifying in court

Bibliography:

By now the trainee should be well enough acquainted with the literature to seek out information pertaining to these subjects. Existing footwear/ tire track reports issued by ISP Forensics should be examined.

10.0 Written Exam

The trainee will complete a written examination. During this exam, the trainee may consult his/her reference notebook, *may* other available references, but not consult *waited if CCF/FSF* *with other examiners.*

11.0 Mock Trial

At the discretion of the trainer, the trial will be based on either a proficiency test from ~~section 8~~, or a cosigned case worked under section 12.

Completion date, sections 9, 10, 11: _____

New Examiner: _____

Training Criminalist: _____

12.0 Cosigned Casework

The new examiner will cosign casework with an experienced examiner. The new examiner has the responsibility of working the case, reaching conclusions, and writing the report. The experienced examiner is responsible for examining the evidence and case notes, and for determining that the conclusion are correct.

Date cosigned casework is completed: _____

Number of cosigned cases completed: _____

New Examiner: _____

Trainer: _____